



AUDIOTRONICS

AC/DC CASSETTE TAPE PLAYER

SERVICE DATA

Designed, Engineered and Manufactured by Audiotronics

MODEL 220

Manual PR-359

August, 1979



SPECIFICATIONS

POWER SOURCE:

— 120 VOLTS AC 50/60Hz (6 WATTS)

— (4) 1.5 VOLT "C" BATTERIES

POWER OUTPUT 400/750MW*

FREQUENCY RESPONSE 100 — 8KHz $\pm$ 6db

S/N RATIO 40db MIN.

CROSS TALK 55db MIN.

HUM & NOISE — Volume Maximum .. 20MV MAX.

Volume Minimum .. 0.5MV MAX.

TAPE SYSTEM COMPACT CASSETTE

SPEED DEVIATION 2% MAX.

WOW & FLUTTER 0.3% MAX.

FAST FORWARD &

REWIND TIME 80 SECONDS

FOR A C-60 CASSETTE

DIMENSIONS 8½" x 9" x 3¼"

TERMINALS — 5 ¼" JACKS FOR HEADSETS OR

4 HEADSETS & 1 EXTERNAL

SPEAKER.

WEIGHT 4 lbs.

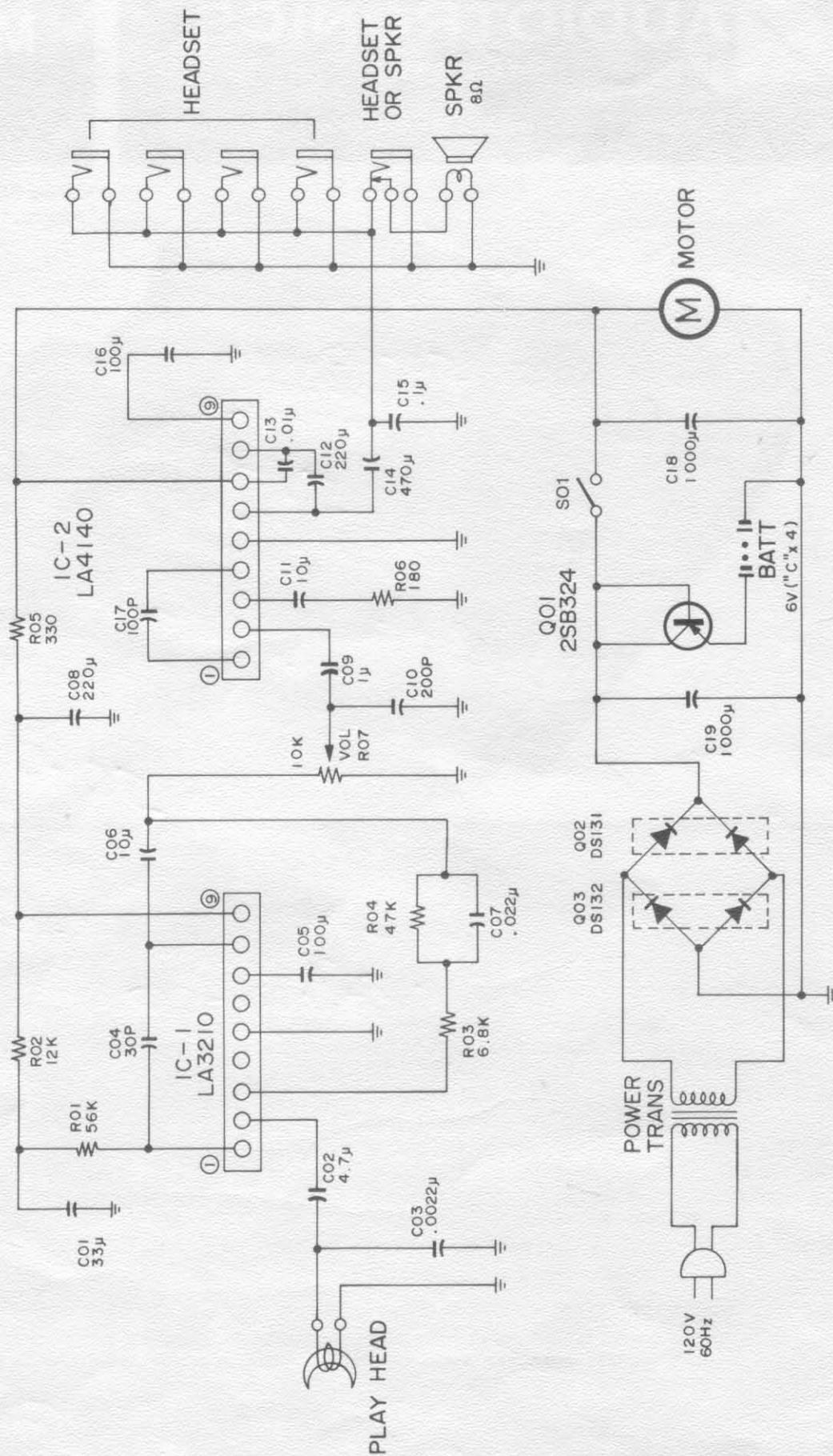
Note: All ratings are nominal. All specifications are subject to change without notice.

*Power output ratings are in accordance with ANSI Standard (PH-2-1973): For example "400/750mw" means 400 milliwatts continuous power, 750 milliwatts momentary power at 5% distortion.

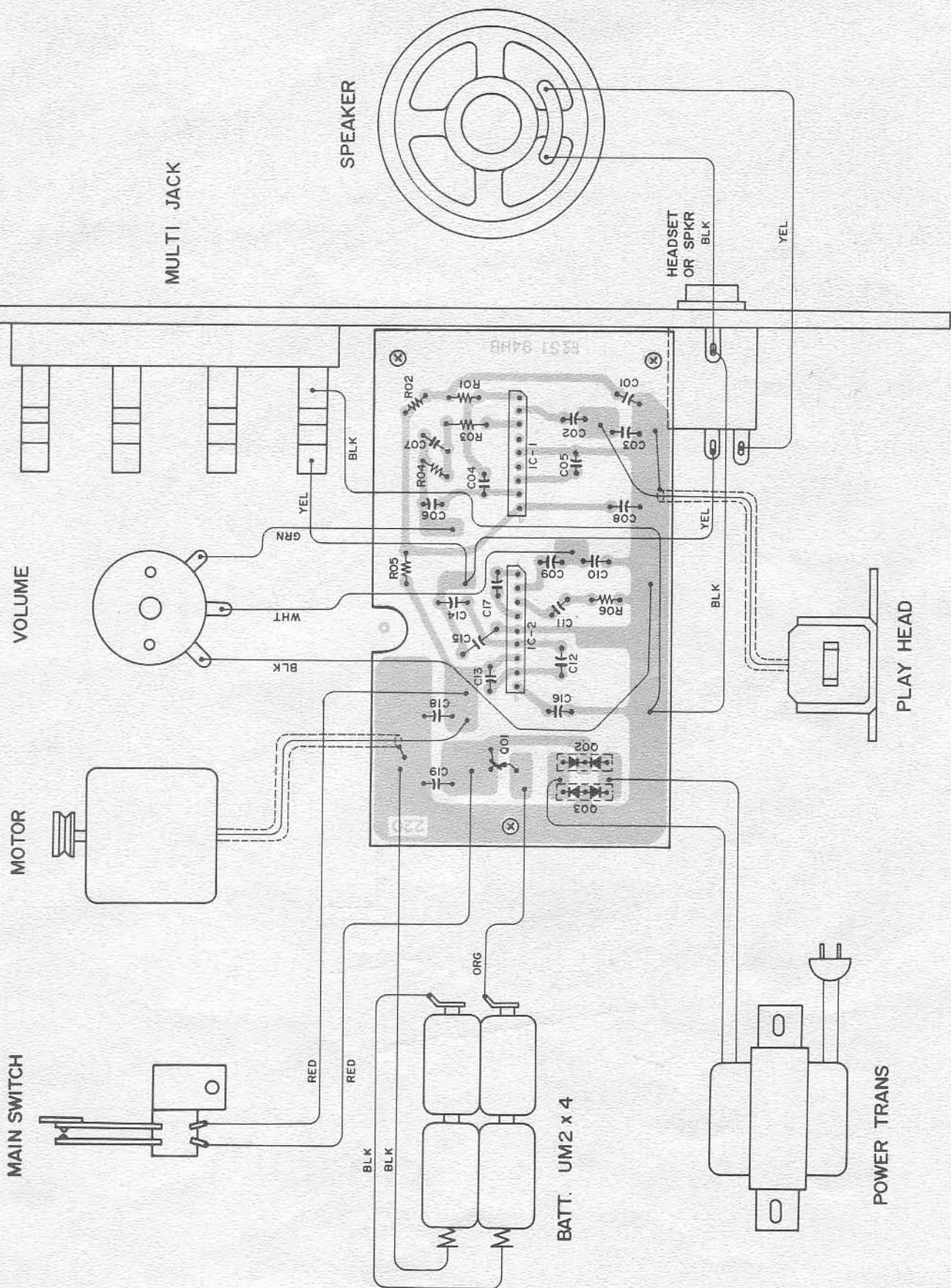
SCHEMATIC DIAGRAM

Notes:

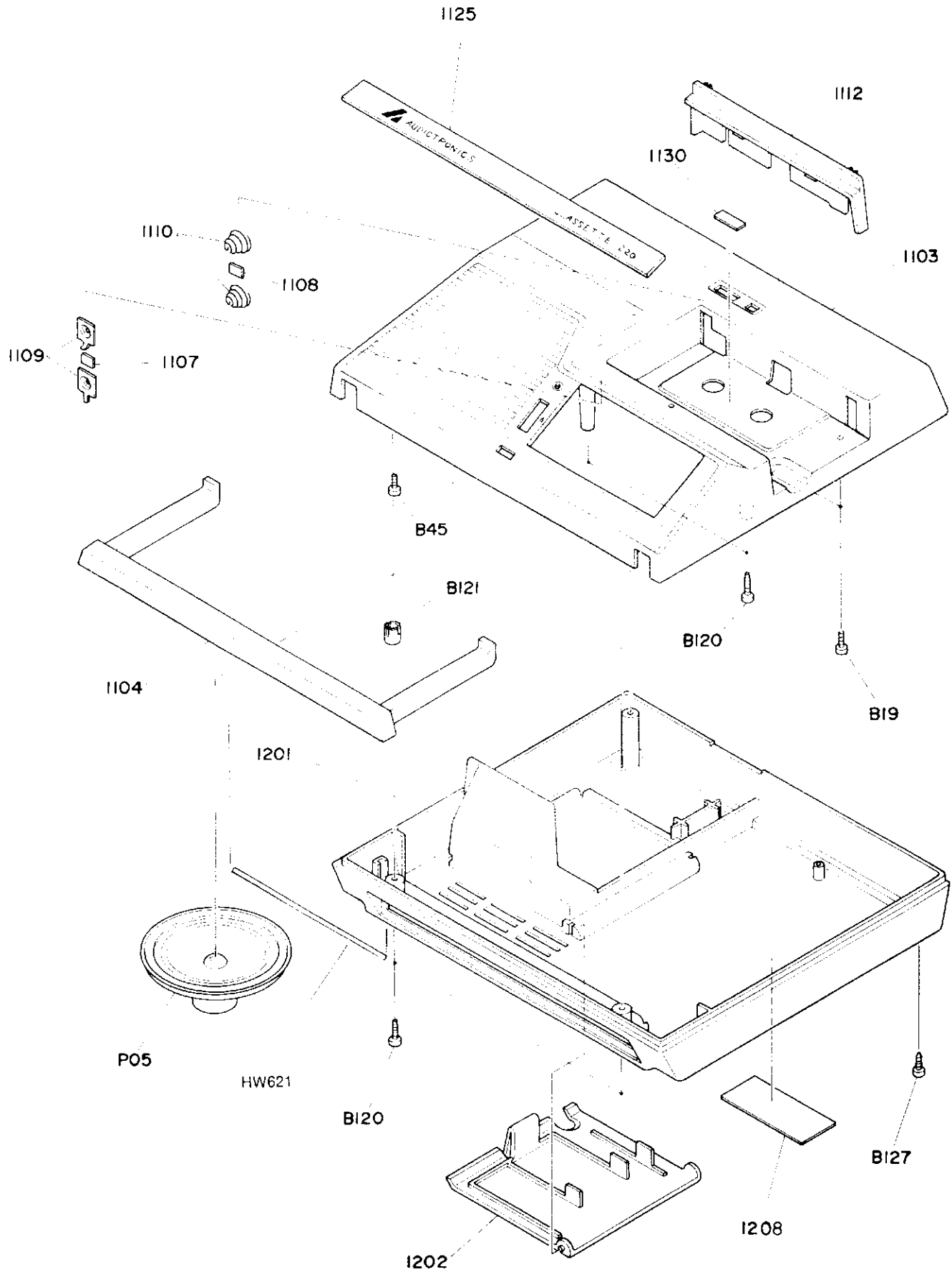
1. All resistors in Ohms.
2. All resistors 1/3 watt, 10% unless otherwise specified.
3. Capacitors in MFD unless otherwise specified.



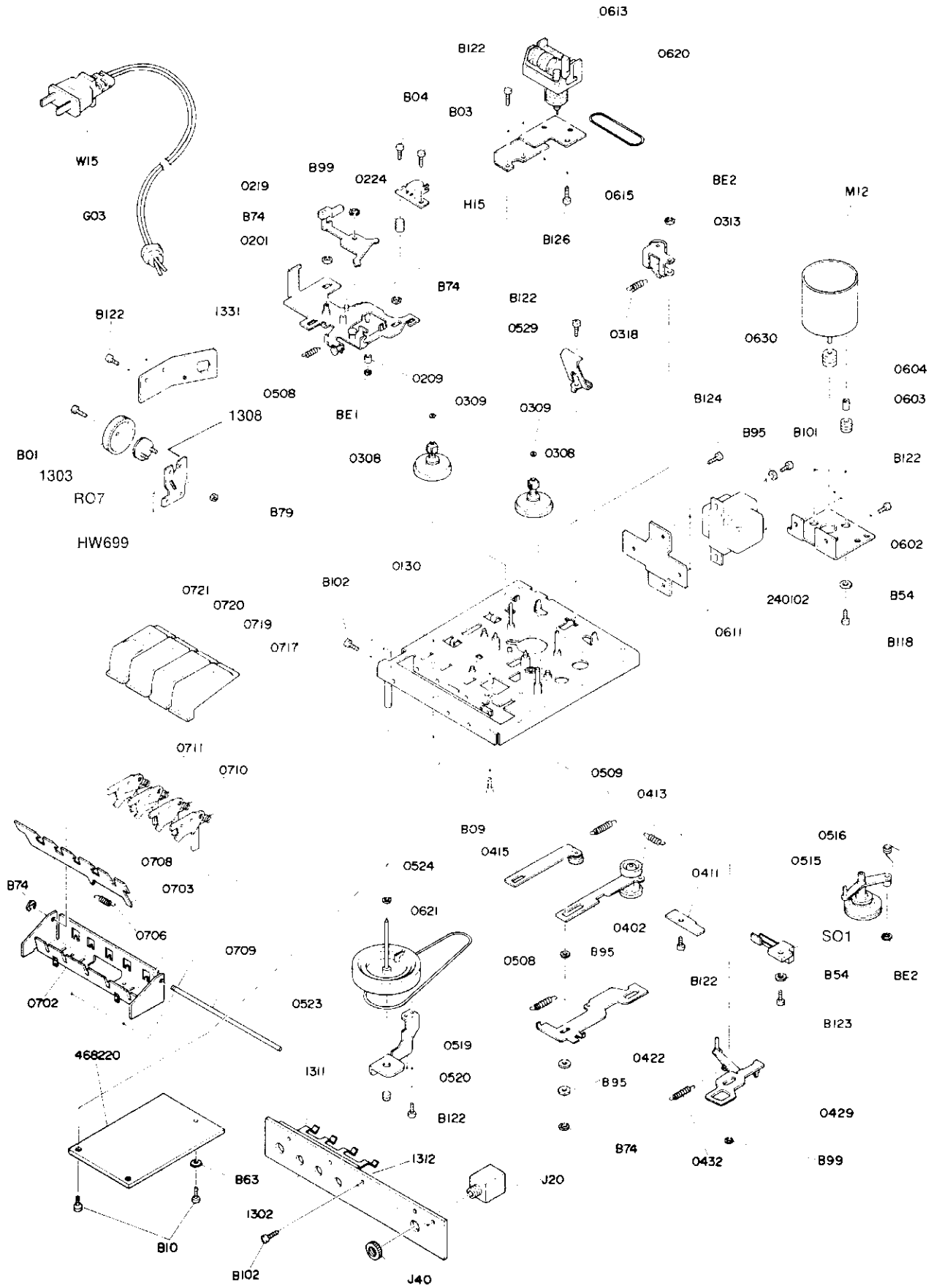
COMPONENT LAYOUT



CASE ASSEMBLY



TAPE DECK



SERVICE GUIDE

The Audiotronics 220 tape player is designed to be virtually maintenance free. However, during normal operation, dust, dirt, tape residue and evaporating oil forms a scum which builds on the heads, belts, idlers and capstan and degrades the recorder's performance. The following maintenance suggestions are recommended:

- A. The Head should be cleaned monthly, during heavy usage, or at regular intervals.
 - B. Pressure rollers and capstan should be checked routinely and cleaned of any residue build-up.
 - C. Drive belts, idlers and pulleys should be checked yearly for wear and cleaned or replaced as needed.
 - D. Smooth movement of recorder's mechanical components insures dependable operation. All sliding parts which come in contact with each other should be cleaned and re-lubricated.
- CAUTION:** Excessive oiling should be avoided and care taken to prevent any lubricant from contacting belts, idlers or capstan.
- E. Azimuth adjust (see section 1.0) should be checked during any minor maintenance or cleaning of head.
 - F. During normal use the Play Head may become magnetized. This results in distorted sound. Run a head demagnetizer (Degausser)

slowly across the head to effectively eliminate any residual magnetism on the head.

1.0 AZIMUTH ADJUST

- A. Low sound output, especially in high frequency, is usually a result of incorrect head azimuth.
- B. Observe recorder's output on a scope or R.M.S. meter.
- C. Adjust play head, during play mode, for maximum output using a standard pre-recorded azimuth tape. Any frequency between 6.3KHz and 10KHz is acceptable with 10KHz being recommended to insure peak performance.
- D. The head adjusting screw is accessible through small hole on recorder's front panel.
- E. Azimuth adjustment is made whenever a record/play head is changed and during routine maintenance for optimum performance.

2.0 BATTERY OPERATION

- A. Tape recorder will operate correctly if battery voltage is within 4.5 to 7.5 volts.
- B. Recorder uses (4) 1.5V "C" type batteries. Insert batteries only in direction indicated, or possible damage may occur.

ANDIOTRONICS MODEL 220 REPLACEMENT PARTS

When ordering parts, please indicate the part number, description and model. Do not use symbol number.

ELECTRICAL PARTS

Symbol No.	Description	Part No.	Symbol No.	Description	Part No.
H15	Play Head	TH-15	Q03	Dual Diode (DS132)	SR-13
IC1	Integrated Circuit LA3210	IN-11	R07	10K Volume Control	RP-119
IC2	Integrated Circuit LA4140	IN-13	S01	Power Switch	SW-35
J20	Headset/Speaker Jack	PJ-16	W15	2 Wire A/C Cord	CO-121
M12	Motor	MO-47	240102	Power Transformer, 120 V	TP- ~~54~~ 53
P05	8 Ohm Speaker	SS-36	2	(for 240 V, use TP- ~~54~~ 54)	
Q01	Transistor PNP (2SB324)	TR-77	468220	Printed Circuit Board Complete	FP-165
Q02	Dual Diode (DS131)	SR-14			

Note: Resistors and capacitors are standard values, and should be obtained locally.

CASE PARTS

<i>Symbol</i> No.	<i>Description</i>	<i>Part No.</i>	<i>Symbol</i> No.	<i>Description</i>	<i>Part No.</i>
1103	Top Cover Complete Including	CS-364	1110	Battery Spring Terminal	HW-622
1112	Cassette Retainer	CS-368	1201	Bottom Cover	CS-383
1125	Nameplate	CS-370	1202	Cord Storage Door	CS-382
1130	Reflector	CS-369	1208	Serial Number Plate (not replaceable)	
1104	Handle	CS-384	B19	PH Pan Hd Thd Forming Scr 3x8mm	MS-112
1107	Battery Terminal Spacer	HW-626	B45	PH Pan Hd Thd Forming Scr 2.6x10mm	MS-113
1108	Battery Spring Terminal Spacer	HW-623	B120	PH Pan Hd Thd Forming Scr 3x14mm	MS-111
1109	Battery Terminal	HW-625	B121	Onsert	HW-624
			B127	PH Pan Hd MS 2.6x10mm	MS-110
			HW621	Speaker Retainer Wire	HW-621

* Serial Nos. after 200490 use Speaker Bracket HW-695 and (2) PH Pan Hd Thd Forming Scr 3x7mm, MS-119.

TAPE DECK PARTS

<i>Symbol</i> No.	<i>Description</i>	<i>Part No.</i>	<i>Symbol</i> No.	<i>Description</i>	<i>Part No.</i>
0130	Chassis	HW-703	0709*	Key Shaft	HW-636
0201	Head Chassis	HW-704	0710*	Key Spring	HW-630
0209	Roller	HW-681	0711*	Key Spring	HW-631
0219	Auto Stop Arm	HW-653	0717	Stop Key	CS-391
0224	Play Head Spring	HW-644	0719	Play Key	CS-392
0308	Spindle	HW-628	0720	Fast Forward Key	CS-393
0309	Spindle Retainer	HW-673	0721	Rewind Key	CS-394
0313	Pinch Roller Assembly	HW-667	B74	"E" Ring, ID 2.8mm	CL-7
0318	Pinch Roller Spring	HW-668			
0402	Rewind Idler Assembly	HW-658	1302	Jack Mounting Panel	CS-397
0411	Idler Assembly Bracket	HW-674	1303	Control Knob	KN-39
0413	Rewind Idler Spring	HW-659	1308	Insulator	HW-694
0415	Rewind Lever Assembly	HW-660	1311	Upper Jack Contact Strip	HW-676
0422	Stop Lever	HW-662	1312	Lower Jack Contact Strip	HW-675
0429	Slide Lever	HW-651	1331	Strain Relief Bracket	HW-692
0432	Stop Lever Spring	HW-652	B01	Control Knob Screw	MS-43
0508	Spring	HW-654	B03	PH Pan Hd MS 2x4mm	MS-51
0509	Rewind Lever Spring	HW-661	B04	PH Pan Hd MS 2x6mm	MS-44
0515	Idler Assembly	HW-641	B09	PH Pan Hd MS 2.6x4mm	MS-46
0516	Idler Spring	HW-640	B10	PH Pan Hd MS 2.6x6mm	MS-47
0519	Flywheel Bracket	HW-638	B54	Flat Washer, ID 2.75mm, OD 7.3mm	WA-57
0520	Flywheel Bearing	HW-677	B63	Lockwasher IT, OD 5.67mm	WA-48
0523	Flywheel Assembly	HW-646	B74	"E" Ring, ID 2.8mm	CL-7
0524	Mylar Washer, ID 2.25mm, OD 6.2mm	WA-101	B79	Hex Nut, 2.x0.4mm	NU-29
0529	Cassette Spring	HW-671	B95	Flat Washer, ID 3.25mm, OD 7.85mm	WA-82
0602	Motor Bracket	HW-684	B99	"E" Ring, ID 3.2mm	CL-20
0603	Motor Grommet	GR-24	B101	PH Pan Hd MS 2.6x5mm	MS-37
0604	Motor Spacer	SP-21	B102	PH Pan Hd MS 3x6mm	MS-94
0611	Transformer Bracket	HW-685	B118	PH Pan Hd MS 2.6x8mm	MS-114
0613	Counter	HW-686		(with lockwasher)	
0615	Counter Bracket	HW-688	B122	PH Pan Hd Thd Forming MS 2.6x4mm	MS-116
0620	Counter Belt	HW-687	B123	PH Pan Hd Ms 3x5mm	MS-118
0621	Motor Belt	HW-639	B124	PH Pan Hd Thd Forming MS 3x5mm	MS-117
0630	Motor Pulley	HW-689	B126	PH Pan Hd MS 3x5mm	MS-115
—	Piano Key Assembly Complete	HW-698	BE1	"E" Ring, ID 1.6mm	CL-9
	Including		BE2	"E" Ring, ID 2.4mm	CL-10
0702*	Key Chassis	HW-637	G03	Cord Grommet	GR-25
0703*	Key Locking Lever	HW-702	HW699	Control Bracket	HW-699
0706*	Lever Spring	HW-635	J40	Headset/Speaker Jack Nut	NU-39
0708*	Key Lever	HW-632			

* If damaged, replace with complete assembly HW-698.